

Title (en)

METHOD OF CONTROLLING TURBINE TIP CLEARANCE, TURBINE TIP CLEARANCE SYSTEM, AND TURBINE ASSEMBLY

Title (de)

REGELVERFAHREN FÜR TURBINESCHAUFELSPITZENSPALT, TURBINESCHAUFELSPITZENSPALTSYSTEM UND TURBINENANORDNUNG

Title (fr)

PROCÉDÉ DE CONTRÔLE DU JEU D'EXTRÉMITÉ D'AUBE DE TURBINE, SYSTÈME DU JEU D'EXTRÉMITÉ D'AUBE DE TURBINE ET AGENCEMENT DE TURBINE

Publication

EP 3091194 A1 20161109 (EN)

Application

EP 16166109 A 20160420

Priority

GB 201507881 A 20150508

Abstract (en)

A method (54) of controlling turbine tip clearance (38). Measure turbine speed (N H); turbine temperature (TGT); and parameters indicative of current operating conditions. Determine limits (44, 46) for the turbine speed (N H) and turbine temperature (TGT). Calculate target tip clearance (38) from the turbine speed, turbine temperature and parameters, to optimise turbine efficiency (·) within the turbine speed and turbine temperature limits (44, 46). Control turbine tip clearance apparatus to the calculated target tip clearance. Also a turbine case cooling system (80). Corresponding turbine tip clearance system and turbine assembly are also provided.

IPC 8 full level

F01D 11/24 (2006.01); **F01D 21/12** (2006.01); **F01D 21/14** (2006.01)

CPC (source: EP US)

F01D 11/24 (2013.01 - EP US); **F01D 21/12** (2013.01 - EP); **F01D 21/14** (2013.01 - EP); **F05D 2270/021** (2013.01 - EP); **F05D 2270/112** (2013.01 - EP); **F05D 2270/303** (2013.01 - EP US); **F05D 2270/304** (2013.01 - EP); **F05D 2270/705** (2013.01 - EP)

Citation (search report)

- [X1] GB 2460948 A 20091223 - GEN ELECTRIC [US]
- [X1] EP 1860281 A2 20071128 - GEN ELECTRIC [US]
- [X1] EP 2843198 A1 20150304 - ROLLS ROYCE PLC [GB]
- [X1] US 2010303612 A1 20101202 - BHATNAGAR SHUBHRA [IN], et al

Cited by

CN110318823A; EP4119775A1; FR3059042A1; CN110050106A; FR3105980A1; US11655725B2; US10995628B2; US12000290B2; WO2018096264A1; WO2021140292A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 3091194 A1 20161109; GB 201507881 D0 20150624; US 10890083 B2 20210112; US 2016326901 A1 20161110

DOCDB simple family (application)

EP 16166109 A 20160420; GB 201507881 A 20150508; US 201615133883 A 20160420